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EXAMINER	
ROMAN, LUIS ENRIQUE	
ART UNIT	PAPER NUMBER
2836	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/692,298	MECHANIC ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5 and 9-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5 and 9-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant amendment filed on 09/04/07 has been entered. Accordingly claims 9-13 have been kept original, claims 1, 4-5 & 14 have been amended and no claims have been cancelled or added new. It also included remarks/arguments.
Objection to claim 1 has been withdrawn.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over:

- Claim 1 & 2 of Mechanic (1) (US 6229682) in view of Okochi et al. (US 5179362) or Pagenkopf (US 6218913).
- Claim 1 & 2 of Mechanic (2) (US 6560086) in view of Okochi et al. (US 5179362) or Pagenkopf (US 6218913).

Mechanic (1) & (2) disclose in **claim 1:** a protective circuit placed between hot, neutral and ground leads of an apparatus and first and second voltage surge protectors in series between hot and neutral, a relay between hot and neutral with a switch that connects (opens) first and second surge protectors to ground when relay is receiving (not receiving) current when the ground lead is connected (not connected) to an electrical ground and in **claim 2:** a capacitor for filtering noise between neutral and ground leads.

The claims 1 & 2 above do not disclose an LC filter/protection having an inductor in series with the ground lead and a capacitor between the neutral and ground leads to eliminate ground noise.

Okochi et al. (US 5179362) discloses a power line filter, which uses an LC filter between neutral and ground, wherein the inductance is disposed in series in the circuit ground lead (Abstract & Fig. 1 elements La, Lb & Cy2).

Pagenkopf (US 6218913) discloses an electromagnetic interference (EMI) filter for use in power lines, which uses an LC filter between neutral and ground, wherein the inductance is disposed in series in the circuit ground lead (Abstract & Fig. 1 inductor and capacitor in L-shaped configuration between neutral & ground).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Mechanic (1) or (2) circuit protections with the inductive-capacitive elements (LC filter) of Okochi et al. or Pagenkopf because it filters electromagnetic interference (EMI) and/or noise.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4 & 13-14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Winch et al. (US 6040969).

Regarding claim 1 Lawrence discloses a protective circuit (Fig. 2) having hot (34), neutral (36), and ground (38) leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a multi-phase power distribution network and corresponding device hot, neutral, and ground leads of a device (40), the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices (Col. 2 lines 59-65 <the examiner notes that both EMI and RFI are unwanted noise which are filtered out with passive or active filters. They are both related, the higher the frequency of RFI the higher the EMI would be because it depends on the frequency>), the protective circuit comprising: a neutral-ground voltage surge protection/filtration circuit including at least one LC filter circuit (88, 98, 96 <the examiner notes that in any electrical circuit where and inductive element [choke 88, which is basically an inductive element] and a capacitor [98, 96] are connected is obvious that the configuration determines an LC filter>) the LC filter circuit comprising: an inductive component (88) disposed in series in the circuit ground lead (38) between the utility network (34, 36, 38) and the device (40); a capacitor (96, 98) connected between the circuit neutral (36) and circuit ground (38) leads after the inductor (88) towards the device (40), the LC filter circuit component is

being adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices (the examiner notes that both EMI and RFI are unwanted noise which are filtered out with passive or active filters. They are both related, the higher the frequency of RFI the higher the EMI would be because it depends on the frequency). Note that the load is a generic term used for electrical/electronic apparatuses, which include computers with microprocessors, and that any feature applied to a monophase power distribution network may easily be duplicated for multiphase power distribution network.

Lawrence does not specifically disclose a first relay connected between the utility network and the device; a first switch controlled by the first relay, the first relay being in an opened position when no current is flowing through the first relay, the absence of current flow in the first relay corresponding to an abnormal state of the protective circuit; the first switch in the opened position disconnecting components of the neutral-ground voltage surge circuit; the first switch being in a closed position when current is flowing through the first relay, the presence of current flow in the first relay corresponding to a normal state of the protective circuit; the first switch in the closed position connecting the components of the neutral-ground voltage surge protection filtration circuit.

Winch et al. teaches a circuit to protect electronic equipment from EMI (Fig. 6) with a relay (34) connected between the utility network (18, 20, 22) and the device (24, 26, 28 <output where the devices are connected>); a switch (A) controlled by the relay (34), the switch being in a closed position when current is flowing through the relay, the presence of current flow in the relay corresponding to a normal state of the protective circuit; the switch in the closed position connecting the components of the neutral-ground voltage surge protection filtration circuit (Col. 15 lines 36-46), the relay being in an opened position when no current is flowing through the relay, the absence of current flow in the relay corresponding to an abnormal state of the protective circuit; the switch in the opened position disconnecting components of the neutral-ground voltage surge circuit (the switch has two states open-close, on-off).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence with the relay of Winch et al. because it

protects connected equipment by preventing supply system overvoltages from reaching the connected equipment (Winch et al. <Col. 24 lines 28-30).

The examiner notes that Winch et al. teaches about the EMI and RFI noises also (Col. 1 lines 16-34).

Regarding claim 4 Lawrence further discloses a circuit (Fig. 2) comprising: a hot-neutral voltage surge protection/filtration circuit component adapted to substantially reduce noise between the hot (34) and neutral (36) ends and to clamp a voltage between the leads (78), the hot-neutral voltage surge protection/filtration circuit including an LC filter circuit (84, 94, 96 <the examiner notes that in any electrical circuit where and inductive element [choke 84; which is basically an inductive element] and a capacitor [94, 96] are connected is obvious that the configuration determines an LC filter>), comprising: an inductive component (84) disposed in series in the circuit hot lead (34) between the utility network (34, 36, 38) and the device (40); a capacitor (94, 96) connected between the hot (34) and neutral (36) leads after the inductor (84) towards the device (40), the LC filter circuit component is being adapted to reduce or eliminate ground noise or noise between hot and neutral leads transmitted to the devices (the examiner notes that both EMI and RFI are unwanted noise which are filtered out with passive or active filters. They are both related, the higher the frequency of RFI the higher the EMI would be because it depends on the frequency).

Regarding claim 13 Lawrence in view of Winch et al. discloses the protective circuit of claim 1.

Lawrence further discloses a first indicator circuit for indicating a normal state (Fig. 2 element 54), and a second indicator circuit for indicating an abnormal state (Fig. 2 element 52).

Regarding claim 14 Lawrence in view of Winch et al. discloses the protective circuit of claim 1.

Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 elements 106, 108), an inductive element in series in the circuit ground lead (Fig. 2 element 88) and capacitors (Fig. 2 elements 96, 98) the LC filter (the examiner notes that in any electrical circuit where and inductive element <choke 88; which is basically an inductive element> and a capacitor <96, 98> are connected is obvious that the configuration determines an LC filter) being adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices (Col. 2 lines 3-7).

Lawrence in view of Winch et al. discloses the claimed invention except for multiple LC filters. It would have been obvious to one having ordinary skills in the art at the time the invention was made to have multiple LC filters, since it has been held that mere duplication of the essential working parts of a device involves only routine skills in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Claims 5 & 9-12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Winch et al. (US 6040969) and Mechanic (US 6229682).

Regarding claim 5 Lawrence in view of Winch et al. discloses the circuit of claim 4 but does not disclose a second relay connected between the utility network and the device; a second switch controlled by the second relay; the second relay being in an opened position when no current is flowing through the relay, the absence of current flow in the second relay corresponding to an abnormal state of the protective circuit (no power to the load); the switch in the opened position disconnecting components of the hot-neutral voltage surge protection/filtration circuit; the second switch being in a closed position when current ifs flowing through the second relay, the presence of current flow in the second relay corresponding to a normal state of the protective circuit; the second switch in the closed position connecting the components of the hot-neutral voltage surge protection/filtration circuit.

Mechanic teaches a transient voltage surge suppressor (TVSS)(Fig. 1) with a relay (42r) connected between the utility network (10, 12, 14) and the device (10a, 12a, 14a <output where the devices are connected>); a controlled by the relay (42k); the relay being in an opened position (situation shown in the figure) when no current is flowing through the relay, the absence of current flow in the second relay corresponding to an abnormal state of the protective circuit (no power to the load); the switch in the opened position disconnecting components of the hot-neutral voltage surge protection/filtration circuit (LC filter 41a/47 and the clamping device 45); the second switch being in a closed position when current ifs flowing through the second relay, the presence of current flow in the second relay corresponding to a normal state of the protective circuit; the second switch in the closed position connecting the components of the hot-neutral voltage surge protection/filtration circuit (the switch has two states open-close, on-off).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence in view of Winch et al. with the (TVSS) of Mechanic because it protects the load is protected from an excess voltage level between the hot and neutral leads from the power utility outlet (Mechanic <Col.2 lines 53-55>).

Regarding claim 9 Lawrence in view of Winch et al. and Mechanic discloses the protective circuit of claim 5.

Winch et al. further discloses further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value (Fig. 5 element 66), a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 10 Lawrence in view of Winch et al. and Mechanic discloses the protective circuit of claim 5.

Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 11 Lawrence in view of Winch et al. and Mechanic discloses the protective circuit of claim 5.

Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 1 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 12 Lawrence in view of Winch et al. and Mechanic discloses the protective circuit of claim 5.

Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46).

Note that the examiner used the reference of Lawrence'490 for the feature of the LC filter between neutral and ground.

The references listed below also teach this feature:

- With the inductive element in series with the ground lead:

- Okochi et al. (US 5179362) discloses a power line filter, which uses an LC filter between neutral and ground, wherein the inductance is disposed in series in the circuit ground lead (Abstract & Fig. 1 elements La, Lb & Cy2).
- Pagenkopf (US 6218913) discloses an electromagnetic interference (EMI) filter for use in power lines, which uses an LC filter between neutral and ground, wherein the inductance is disposed in series in the circuit ground lead (Abstract & Fig. 1 inductor and capacitor in L-shaped configuration between neutral & ground).
- Hutchison (US 5969583) discloses an EMI filtering circuit (Abstract & Fig. 1 elements 114 <inductance> & 122 <capacitance> connected elements between neutral and ground).

- With the inductive element in series with the neutral lead (note that the filter performs the same by having the inductor in series with either the neutral or ground lead):
  - Muelleman (US 5666255) discloses a system for suppression of transient impulses, which uses an LC filter between neutral and ground (Abstract & Fig. 3 elements 52 & 82).
  - Frederick (US 5083101) discloses an electromagnetic interference (EMI) filter for attenuating both common mode and differential mode EMI conducted emissions from electronic equipment (Abstract & Fig. 1 elements 22<bottom inductor> & 48).
  - Kitchens (US 4845580) discloses an spike eliminating bandpass filter for AC and DC power lines for telecommunication apparatus and computers (Abstract, Claim 1 & Fig. 1 elements C8, C9 & L9).
  - Ari et al. (US 4760485) discloses a surge arrester circuit that provides protection against transient disturbances, which uses an LC filter between neutral and ground (Abstract & Fig. 1 elements L4, L5, L6, C3 & C5).
  - Epstein (US 4675772) discloses a protector network for AC equipment, which uses an LC filter between neutral and ground (Abstract & Fig. 2 elements 27 & 28).

- Stolarczyk (US 4912589) discloses a surge suppression network (Abstract & Fig. 9 elements 574 <inductance> and 592 <capacitor> connected elements between neutral and ground).

Response to Arguments

Applicant's arguments filed 1, 4-5 & 9-14 have been fully considered but they are not persuasive.

The examiner notes:

An LC filter performs the filtering of both EMI and RFI.

Lawrence'490 places an LC filter with the exact same configuration and position with respect to the neutral and ground leads (Fig. 2 elements 36, 38, 88, 98 & 96) than the claimed invention by applicant (Fig. 1A elements 106a, 108a 116 & 118). It is important to notice that the mere selection of capacitor/inductance values for the specific performance of the LC filter required does not involve any inventive step.

Applicant has different reasons than Lawrence'490 to place an inductive element in series with the ground lead and a capacitor between the neutral and ground leads (both of them LC filter L-shaped configured by an inductor and a capacitor).

Lawrence'490 discloses that the choke 86 to attenuate RFI (Col. 4 lines 43-47).

Lawrence'490 discloses that the circuit is effective for EMI (Col. 2 lines 3-7).

The examiner notes also that the entire rejection may be made under 103 with the references of Mechanic (1) & (2) combined with the references provided in this action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

LR/111907

11/26/07

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